

WHAT IS CLAIMED IS:

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1. A stent assembly for maintaining the patency of a body lumen comprising an expandable stent with a cylindrical jacket formed of biocompatible, non-thrombogenic material.

5 2. The stent assembly of claim 1 wherein the cylindrical jacket is formed of heterologous tissue.

→ C27  
3. The stent of claim 2, wherein the heterologous tissue is selected from the group consisting of bovine pericardium, porcine pericardium, and aortic leaflet, veins and arteries.

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10 4. The stent of claim 3, wherein the heterologous tissue comprises bovine pericardium with cross-linked collagen.

5. The stent of claim 2 including at least one therapeutic or diagnostic agent releasably contained in the cylindrical jacket.

15 6. The stent assembly of claim 1 wherein the material is expandable.

7. The stent assembly of claim 1 wherein the stent comprises a metallic tubular member.

8. The stent assembly of claim 1 wherein the cylindrical jacket is on an exterior surface of the stent.

9. The stent assembly of claim 1 wherein the stent is disposed within the cylindrical jacket.

10. A method for maintaining the patency of a body lumen comprising the steps of:

a) mounting on a delivery catheter a stent assembly comprising a tubular expandable stent with a cylindrical jacket formed of biocompatible, non-thrombogenic expandable material;

b) advancing the delivery catheter through the body lumen until the stent assembly is positioned at a desired location;

c) expanding the stent assembly to anchor it within the bodily lumen; and

d) withdrawing the delivery catheter.

11. A cylindrical jacket formed of heterologous tissue configured to fit over a portion of an intraluminal stent.

12. The cylindrical jacket of claim 11 having a length of about 4 to about 200 mm.

13. The cylindrical jacket of claim 11 having a length of about 10 to about 50 mm.

14. The cylindrical jacket of claim 11 having a diameter of about 1.5 to about 60 mm.

15. The cylindrical jacket of claim 14 having a diameter of not greater than about 6 mm.

16. The cylindrical jacket of claim 11 having a diameter of about 2.5 to about 5 mm.

5 17. The cylindrical jacket of claim 11 having a thickness of about 0.05 mm to about 0.20 mm.

18. The cylindrical jacket of claim 11 having a thickness of about 0.1 mm to about 0.15 mm.

10 19. The cylindrical jacket of claim 11 configured to fit over an outer portion of the intraluminal stent.

20. The cylindrical jacket of claim 11 configured to cover an inner portion of the intraluminal stent.

15 ~~21. A method of treating a patient, comprising:~~  
~~a) providing an elongated delivery catheter having an expandable member on a distal extremity thereof;~~  
~~b) mounting an expandable stent having a cylindrical jacket formed of biocompatible, non-thrombogenic expandable material onto the expandable member on the distal extremity of the delivery catheter;~~

advancing at least the distal extremity of the catheter within a body lumen of the patient until the jacketed stent is disposed at a desired location within the body lumen;

d) expanding the expandable member on the distal extremity of the catheter to expand the jacketed stent mounted thereon and fix the expanded jacketed stent within the body lumen; and

e) contracting the expanded expandable member so the elongated delivery catheter can be removed from the patient.

22. A stent assembly for maintaining the patency of a body lumen comprising an expandable stent with a cylindrical jacket formed of biocompatible, non-thrombogenic expandable material containing a therapeutic or diagnostic agent.

23. The stent assembly of claim 22 wherein the therapeutic agent is selected from the group consisting of antithrombotic agents and angiogenesis agents.

24. The stent assembly of claim 23 wherein the antithrombotic agent is selected from the group consisting of is selected from the group consisting of heparin, urokinase, streptokinase, tissue plasminogen activator, and abciximab, and the angiogenesis agent is selected from the group consisting of Fibroblast Growth Factor and Vascular Endothelial Growth Factor.

25. The stent assembly of claim 22 wherein material comprises heterologous tissue configured to fit over at least one of an outer surface and an inner surface of the stent.

26. A method for maintaining the patency of a body lumen comprising the steps of:

- a) mounting on a delivery catheter a stent assembly comprising a tubular expandable stent with a cylindrical jacket formed of biocompatible, non-thrombogenic expandable material containing a therapeutic or diagnostic agent;
- b) advancing the delivery catheter through the body lumen until the stent assembly is positioned at a desired location;
- c) expanding the stent assembly to anchor it within the bodily lumen and deliver the therapeutic or diagnostic agent to the desired location within the body lumen; and
- d) withdrawing the delivery catheter.

27. The method of claim 26 wherein the delivery catheter has an expandable member on a distal extremity thereof, and including the step of mounting the expandable stent onto the delivery catheter expandable member, and wherein the step of expanding the stent comprises expanding the delivery catheter expandable member.

28. The method of claim 26 including step of contracting the expanded expandable member so the delivery catheter can be removed from the patient.

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29. An expandable jacketed stent comprising a metallic tubular member configured to expand from a first circumference configuration to a second circumference configuration, and a jacket formed of heterologous tissue containing a therapeutic or diagnostic agent and having a thickness of about 0.05 mm to about 0.20 mm.

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30. The jacketed stent of claim 29 wherein the jacket is on an outer surface of the stent in a folded configuration configured to unfold as the stent expands to the second circumference configuration.

31. The jacketed stent of claim 29 wherein the jacket is on an outer surface of the stent in a wrapped configuration configured to unwrap as the stent expands to the second circumference configuration.

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32. A method of treating a patient, comprising:

a) providing an elongated delivery catheter having an expandable member on a distal extremity thereof;

b) mounting onto the expandable member on the distal extremity of the delivery catheter an expandable stent having first circumference and a second expanded circumference and having a

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cylindrical jacket formed of biocompatible, non-thrombogenic expandable material on an outer surface of the stent, the jacket having a width about equal to the second expanded circumference of the stent;

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c) advancing at least the distal extremity of the catheter within a body lumen of the patient until the jacketed stent is disposed at a desired location within the body lumen;

d) expanding the expandable member on the distal extremity of the catheter to expand the jacketed stent mounted thereon and fix the expanded jacketed stent within the body lumen; and

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e) contracting the expanded expandable member so the elongated delivery catheter can be removed from the patient.

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33. The method of claim 32 wherein the jacket is in a folded configuration configured to unfold as the stent expands to the second circumference configuration.

34. The method of claim 32 wherein the jacket is in a wrapped configuration configured to unwrap as the stent expands to the second circumference configuration.

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